UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/531,249	04/14/2005	Laurent Regnier	S1022.81220US00	1226

46329 7590 05/29/2008

STMicroelectronics Inc.
c/o WOLF, GREENFIELD & SACKS, P.C.
600 Atlantic Avenue
BOSTON, MA 02210-2206

EXAMINER	
SMITH, JOSHUA Y	

ART UNIT	PAPER NUMBER
2619	

MAIL DATE	DELIVERY MODE
05/29/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/531,249	REGNIER, LAURENT	
	Examiner	Art Unit	
	JOSHUA SMITH	2619	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 February 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

The amendment filed 02/14/2008 has been entered

- **Claims 1-20 are pending.**
- **Claims 1-20 stand rejected.**

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 5 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Claim 5 states "the first message having a first length and comprising a first segment having a second length, the first length being shorter than the second length". Applicant does not adequately disclose in pages 3-5, 7-8, and 9-10, and in FIG. 2, FIG. 3A, FIG. 3B, and FIG. 5, or elsewhere, how a message is transmitted in two segments, but the message has a length shorter than the length of a segment, in such a manner that one of ordinary skill in the art at the time of the invention could make and use the claimed invention.

In addition, Claim 5 states "the first message having a first length and comprising a first segment having a second length". Applicant discloses in page 4, lines 16-17, "a message 30 comprising three packets 31, 32, and 33", teaching that a message comprises packets, not segments. Applicant's disclosure appears to contradict the language of Claim 5, and, as a result, Applicant does not adequately disclose how a message comprises a segment in such a manner that one of ordinary skill in the art at the time of the invention could make and use the claimed invention.

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 5 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 5 states "the first message having a first length and comprising a first segment having a second length, the first length being shorter than the second length". This is indefinite since it is unclear how a message that is long enough to be transmitted in two segments is actually shorter than a segment.

In addition, Claim 5 states "the first message having a first length and comprising a first segment having a second length". This is indefinite since Applicant discloses in page 4, lines 16-17, "a message 30 comprising three packets 31, 32, and 33", teaching that a message comprises packets, not segments.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nexus 5001 Forum, "Standard for a Global Embedded Processor Debug Interface", IEEE-ISTO, pages 5, 28-29 and 92-97 of 150, in view of Petersen et al. (Patent Number: 5,822,321), hereafter referred to as the Nexus reference and Petersen, respectively.

In regard to Claims 1 and 4, the Nexus reference teaches in Page 1 of 150, an embedded processor debug interface standard for embedded control applications and where applications include automotive powertrain, data communications, computer peripherals, and other control applications, and, in Page 5 of 150, high-performance on-chip instruction cache and flash, and, in Page 29-29 of 150, and in Figure 5-3, Page 28

of 150, an Emulator connected to a Target and a Host (transmitting between a monitoring circuit integrated to a microprocessor and an analysis tool and means for).

The Nexus reference also teaches in Page 97 of 150, 1st and 5th bullets, a data message is divided into packets, and, in Page 95 of 150, and in Page 96 of 150, Table 8-2, a transfer of an Indirect Branch message involving a transfer protocol, and where packets of the message are transmitted in sections of four bits or less with each count of a clock, and implicitly teaching that the message is to be reconstructed eventually at a receiving end (dividing each data packet into successive segments of same predetermined size, and reconstituting packets of each message by arranging end to end segments containing data of a same packet).

The Nexus reference also teaches in Page 92 of 150, and in Page 96 of 150, Table 8-2, and in Page 94 of 150, Figure 8-2, four-bit transmission sections of the packets are labeled as “Idle”, “Start Message”, “Normal Transfer”, “End Packet”, and “End Packet/Message” (each segment being classified according to one or the other of five types, segment containing a message start, intermediary data, a packet end, a message end, or empty segment, and being classified as a segment containing a packet end).

The Nexus reference also teaches in Page 92 of 150, and in Page 96 of 150, Table 8-2, and in Page 94 of 150, Figure 8-2, two MSEO pins are used to indicate the state of the four-bit transmission at each clock count, and where bit pattern changes between a certain clock count and its previous clock count are used to indicate a state at the certain clock count (sending at the same time as each segment an identification

signal characterizing a type difference between the considered segment and the previous segment).

The Nexus reference fails to teach characterizing a segment containing both a start and an end of a message is classified as being a segment containing a message end, and a segment containing both a start of a message and an end of a first packet of a message. Petersen teaches these limitations.

In the same field of endeavor, Petersen teaches in column 4, lines 37-41, and in FIG. 4b, Sheet 2 of 10, if a data packet is so short that it can fit into a single minicell, segmentation is not necessary, and a sending entity will send the data packet to the receiving entity in a single minicell marked “last segment” (a segment containing both a start and an end of a message is classified as being a segment containing a message end).

Petersen also teaches in column 3, lines 54-56, and in FIG. 4b, Sheet 2 of 10, the length of each minicell is limited to a length less than an ATM cell payload, and since a minicell is used for the beginning portion of each packet larger than a minicell, and since Petersen does not exclude such a minicell being completely contained within an ATM cell payload, Petersen implicitly teaches a minicell containing the beginning portion of a packet being completely contained within an ATM cell payload (a segment containing both a start of a message and an end of a first packet of a message). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the invention of Petersen with the teachings of the Nexus reference since Petersen teaches a method where packets are segmented into minicells, which are

transmitted within ATM cells, and where the method ensures that the maximum ATM cell payload is completely utilized by allowing data from more than one minicell to exist within the payload of an ATM cell, providing the most efficient usage of bandwidth, and can be implemented in the system of the Nexus reference to ensure that transfers per clocking period are carrying the maximum amount of data by allowing data from more than one packet or message to exist in a single transfer when a transfer is not filled when transferring data of only a single packet or message.

In regard to Claim 2, the Nexus reference teaches in Page 92 of 150, and in Page 94 of 150, Figure 8-2, the use of 2-pin MSEO transfers, and teaches that a Start Message can be transferred after an End Message transfer or an Idle transfer (a segment containing a start message may be transmitted after a segment containing a message end or an empty segment), and an Idle transfer can occur after an End Message transfer or after another Idle transfer (a segment containing an empty segment may be transmitted after a segment containing a message end or an empty segment).

The Nexus reference also teaches in Page 92 of 150, and in Page 94 of 150, Figure 8-2, a Normal Transfer can occur after a Start Message, another Normal Transfer, or an End Packet (a segment containing intermediary data may be transmitted after a segment containing a message start or intermediary data or a packet end).

The Nexus reference also teaches in Page 92 of 150, and in Page 94 of 150, Figure 8-2, an End Message transfer can occur after a Start Message transfer, a

Normal transfer, or an End Packet transfer, and an End Packet transfer can occur after a Start Message or a Normal Transfer. The Nexus reference does not teach an End Message transfer can occur after an Idle transfer, and does not teach that an End Packet transfer can occur after an Idle transfer or an End Message transfer. Petersen teaches these limitations.

In the same field of endeavor, Petersen teaches in column 4, lines 42-52, and in column 5, lines 4-10, and in FIG. 6, Sheet 4 of 10, a reassembly process (item 600) where, after an idle state (item 601), it enters a reassembly state (item 602) whenever a receiving entity receives a minicell marked "last segment", where, as taught in column 4, lines 37-41, if a data packet so short that it can fit into a single minicell, segmentation is not necessary and the data packet (whole message, including its "end") is sent to a receiving entity in a single minicell (single packet, the packet containing the whole message) marked "last segment" (the single packet represented as a "last packet" and contains the message's "beginning" and "end"). Therefore, the combined teachings of the Nexus document and Petersen teach a segment containing a packet end or a message end may be transmitted after a segment of any type. It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the invention of Petersen with the teachings of the Nexus reference since Petersen teaches a method where packets are segmented into minicells, which are transmitted within ATM cells, and where the method ensures that the maximum ATM cell payload is completely utilized by allowing data from more than one minicell to exist within the payload of an ATM cell, providing the most efficient usage of bandwidth, and can be

implemented in the system of the Nexus reference to ensure that transfers per clocking period are carrying the maximum amount of data by allowing data from more than one packet or message to exist in a single transfer when a transfer is not filled when transferring data of only a single packet or message.

In regard to Claims 3 and 6, the Nexus reference teaches in Page 92 of 150, and in Page 94 of 150, Figure 8-2, a complement MSE has a value equal to "00" when a transfer contains a Start Message or is a Normal Transfer (a first value if a transmitted segment contains a message start or intermediary data).
The Nexus reference also teaches in Page 92 of 150, and in Page 94 of 150, Figure 8-2, a complement MSE has a value equal to "01" when a transfer contains an End Packet (a second value is a transmitted segment containing a packet end).

The Nexus reference also teaches in Page 92 of 150, and in Page 94 of 150, Figure 8-2, a complement MSE has a value equal to "10" (a third value).
The Nexus reference also teaches in Page 92 of 150, and in Page 94 of 150, Figure 8-2, a complement MSE has a value equal to "11" for an Idle transfer (a fourth value is a transmitted segment is empty), and for an End Message transfer that follows a Start Message transfer, Normal Transfer, or an End Packet transfer (transmitted segment contains a message end and if a previous message contained a message start, intermediary data, or a packet end). The Nexus reference fails to teach a transmitted segment contains a message end (EM) if a previous segment contained a message end (EM) or was an empty segment (ID). Petersen teaches these limitations.

Petersen teaches in column 4, lines 42-52, and in column 5, lines 4-10, and in FIG. 6, Sheet 4 of 10, a reassembly process (item 600) where, after an idle state (item 601), it enters a reassembly state (item 602) whenever a receiving entity receives a minicell marked “last segment”, where, as taught in column 4, lines 37-41, if a data packet so short that it can fit into a single minicell, segmentation is not necessary and the data packet (whole message, including its “end“) is sent to a receiving entity in a single minicell (single packet, the packet containing the whole message) marked “last segment” (the single packet represented as a “last packet“ and contains the message‘s “beginning“ and “end“), and implicitly teaching that a whole data packet, including its “end“, can be contained in a single minicell marked “last segment“ and the minicell can be contained within an ATM cell and can follow an Idle state, or, as taught in FIG. 4b, Sheet 2 of 10, can follow another minicell containing the end of another packet (item 411) (a transmitted segment contains a message end if a previous segment contained a message end or was an empty segment). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the invention of Petersen with the teachings of the Nexus reference since Petersen teaches a method where packets are segmented into minicells, which are transmitted within ATM cells, and where the method ensures that the maximum ATM cell payload is completely utilized by allowing data from more than one minicell to exist within the payload of an ATM cell, providing the most efficient usage of bandwidth, and can be implemented in the system of the Nexus reference to ensure that transfers per clocking period are carrying the maximum amount of data by allowing data from more than one packet or message to

exist in a single transfer when a transfer is not filled when transferring data of only a single packet or message.

In regard to Claim 5, as discussed in the rejection of Claim 5, the Nexus reference teaches a first message, a first packet, and segments. The Nexus reference fails to teach a first message having a first length, a first segment having a second length, a first length being shorter than a second length. Petersen teaches these limitations.

Petersen teaches in column 3, lines 54-56, and in FIG. 4b, Sheet 2 of 10, a leftmost "user packet" (FIG. 4b) (message) and a leftmost "minicell" (FIG. 4b) (packet), is split between two ATM cells (FIG. 4b) (two segments), and where an ATM cell (segment) has a larger length than a user packet (message) that can be completely contained within a minicell (packet) (a first message having a first length, a first segment having a second length, a first length being shorter than a second length). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the invention of Petersen with the teachings of the Nexus reference since Petersen teaches a method where packets are segmented into minicells, which are transmitted within ATM cells, and where the method ensures that the maximum ATM cell payload is completely utilized by allowing data from more than one minicell to exist within the payload of an ATM cell, providing the most efficient usage of bandwidth, and can be implemented in the system of the Nexus reference to ensure that transfers per clocking period are carrying the maximum amount of data by allowing data from more

than one packet or message to exist in a single transfer when a transfer is not filled when transferring data of only a single packet or message.

In regard to Claims 7 and 8, the Nexus reference teaches in Page 97 of 150, 2nd and 3rd bullets, a variable-sized packet may start within a port boundary only when following a fixed-length packet, and whenever a variable-length packet is sized such that it does not end on a port boundary, it is necessary to extend and zero fill remaining bits after a highest-order bit so that it can end on a port boundary (unused most significant bits of a last segment are assigned a predetermined value).

Claims 9, 10 and 14-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Nexus reference in view of Paul Hulme Walker et al. (Pub. No.: US 2003/0091056 A1), hereafter referred to as Walker.

In regard to Claims 9 and 10, the Nexus reference teaches in Page 1 of 150, an embedded processor debug interface standard for embedded control applications and where applications include automotive powertrain, data communications, computer peripherals, and other control applications, and, in Page 5 of 150, high-performance on-chip instruction cache and flash, and, in Page 29-29 of 150, and in Figure 5-3, Page 28 of 150, an Emulator connected to a Target and a Host (transmitting between a monitoring circuit integrated to a microprocessor and an analysis tool).

The Nexus reference also teaches in Page 97 of 150, 1st and 5th bullets, a data message is divided into packets, and, in Page 95 of 150, and in Page 96 of 150, Table

8-2, a transfer of an Indirect Branch message involving a transfer protocol, and where packets of the message are transmitted in sections of four bits or less with each count of a clock, and implicitly teaching that the message is to be reconstructed eventually at a receiving end (dividing each data packet into successive segments of same predetermined size, and reconstituting packets of each message by arranging end to end segments containing data of a same packet).

The Nexus reference also teaches in Page 92 of 150, and in Page 96 of 150, Table 8-2, and in Page 94 of 150, Figure 8-2, four-bit transmission sections of the packets are labeled as “Idle”, “Start Message”, “Normal Transfer”, “End Packet”, and “End Packet/Message” (each segment being classified according to one or the other of five types, segment containing a message start, intermediary data, a packet end, a message end, or empty segment, and being classified as a segment containing a packet end, sending in sequence a first segment and a second segment). The Nexus reference fails to teach a first data unit is classified as a message end and a second data unit is classified as a message end. Walker teaches these limitations.

In the same field of endeavor, Walker teaches in paragraphs [0150]-[0152] and [0186]-[0187], and in FIG. 16, an ACTIVE state (item ACTIVE, FIG. 16) in which a condition to remain in an ACTIVE state is LAST_PACKET_LEVEL WAS_EOP_OR_EOM (FIG. 16), implicitly teaching a condition where it is possible to have two successive conditions where EOMs (end of message) are received successively and keep a device in an active state (a first segment is classified as a message end and a second segment is classified as a message end). It would have

been obvious to one of ordinary skill in the art at the time of the invention to combine the invention of Walker with the teachings of the Nexus reference since Walker provides a system that includes circuitry for interfacing two devices involved in transforming signals and a state machine for ensuring an organized transfer of data based on identifying types of data units, including end of messages (EOM) and end of packets (EOP), and can be incorporated into the teachings of the Nexus reference to provide the capabilities of transformers and to ensure proper identification and transmission of data in implementing such transformers.

In regard to Claim 14, as discussed in the rejection of Claim 9, the Nexus reference teaches sending from an integrated circuit to a monitoring tool a segment. The Nexus reference further teaches a third segment of a plurality of segments, a third segment is classified as message start. The Nexus reference teaches in Page 92 of 150, and in Page 96 of 150, Table 8-2, and in Page 94 of 150, Figure 8-2, four-bit transmission sections of the packets are labeled as “Idle”, “Start Message”, “Normal Transfer”, “End Packet”, and “End Packet/Message”, and where a “Start Message" labeled section is transmitted after an “End Message" labeled section (a third segment of a plurality of segments, a third segment is classified as message start).

In regard to Claim 15, as discussed in the rejection of Claim 9, the Nexus reference teaches sending from an integrated circuit to a monitoring tool a segment. The Nexus reference further teaches a fourth segment of a plurality of segments, a

fourth segment is classified as intermediary data. The Nexus reference teaches in Page 92 of 150, and in Page 96 of 150, Table 8-2, and in Page 94 of 150, Figure 8-2, four-bit transmission sections of the packets are labeled as “Idle”, “Start Message”, “Normal Transfer”, “End Packet”, and “End Packet/Message”, and where a “Normal Transfer” labeled section is transmitted after an “End Message" labeled section (a fourth segment of a plurality of segments, a fourth segment is classified as intermediary data).

In regard to Claim 16, as discussed in the rejection of Claim 9, the Nexus reference teaches sending from an integrated circuit to a monitoring tool a segment. The Nexus reference further teaches a third segment of a plurality of segments, a third segment is classified as message start. The Nexus reference teaches in Page 92 of 150, and in Page 96 of 150, Table 8-2, and in Page 94 of 150, Figure 8-2, four-bit transmission sections of the packets are labeled as “Idle”, “Start Message”, “Normal Transfer”, “End Packet”, and “End Packet/Message”, and where a “Start Message” labeled section is transmitted after an “End Message" labeled section (a third segment of a plurality of segments, a third segment is classified as message start).

In regard to Claim 17, as discussed in the rejection of Claim 9, the Nexus reference teaches sending from an integrated circuit to a monitoring tool a segment. The Nexus reference further teaches a fourth segment of a plurality of segments, a fourth segment is classified as intermediary data. The Nexus reference teaches in Page 92 of 150, and in Page 96 of 150, Table 8-2, and in Page 94 of 150, Figure 8-2,

four-bit transmission sections of the packets are labeled as “Idle”, “Start Message”, “Normal Transfer”, “End Packet”, and “End Packet/Message”, and where a “Normal Transfer” labeled section is transmitted after an “Start Message” labeled section (a fourth segment of a plurality of segments, a fourth segment is classified as intermediary data).

Claims 11-13 and 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Nexus reference in view of Walker, and further in view of Petersen.

In regard to Claim 11, as discussed in the rejection of Claim 9, the Nexus reference teaches classifying a segment as an empty segment and classifying a segment as a packet end. The Nexus reference also teaches in Page 92 of 150, and in Page 96 of 150, Table 8-2, and in Page 94 of 150, Figure 8-2, receiving segments during idle periods where no message is sent (see item Idle, Figure 8-2) before activity involving a message (first segment is classified as an empty segment and a second segment is classified). The Nexus reference fails to teach a second segment contains a packet end. Petersen teaches these limitations.

In the same field of endeavor, Petersen teaches in column 4, lines 42-47, an idle state 601 (FIG. 6), and then shifting to a reassembly state 602 (FIG. 6) when first data arrives (item 604, FIG. 6), and, in column 3, lines 45-56, an ATM cell 410 (segment) may contain multiple minicells 411, 412, 413 (packets) from a user packet 410 (message), and where an end of a minicell 413 is contained in an ATM cell (a second

segment contains a packet end). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the invention of Petersen with the teachings of the Nexus reference since Petersen teaches a method where packets are segmented into minicells, which are transmitted within ATM cells, and where the method ensures that the maximum ATM cell payload is completely utilized by allowing data from more than one minicell to exist within the payload of an ATM cell, providing the most efficient usage of bandwidth, and can be implemented in the system of the Nexus reference to ensure that transfers per clocking period are carrying the maximum amount of data by allowing data from more than one packet or message to exist in a single transfer when a transfer is not filled when transferring data of only a single packet or message.

In regard to Claim 12, as discussed in the rejection of Claim 9, the Nexus reference teaches classifying a segment as a message end and classifying a segment as a packet end. The Nexus reference fails to teach a first segment classified as a message end and a second segment contains a packet end.

In the same field of endeavor, Petersen teaches in column 3, lines 45-56, an ATM cell 410 (segment) may contain multiple minicells 411, 412, 413 (packets) from a user packet 410 (message), and where an ATM cell contains a minicell 411 with a user packet end and is followed by an ATM cell with a minicell end (a first segment contains a message end and a second segment contains a packet end). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the

invention of Petersen with the teachings of the Nexus reference since Petersen teaches a method where packets are segmented into minicells, which are transmitted within ATM cells, and where the method ensures that the maximum ATM cell payload is completely utilized by allowing data from more than one minicell to exist within the payload of an ATM cell, providing the most efficient usage of bandwidth, and can be implemented in the system of the Nexus reference to ensure that transfers per clocking period are carrying the maximum amount of data by allowing data from more than one packet or message to exist in a single transfer when a transfer is not filled when transferring data of only a single packet or message.

In regard to Claim 13, as discussed in the rejection of Claim 9, the Nexus reference teaches classifying a segment as an empty segment and classifying a segment as a packet end. The Nexus reference also teaches in Page 92 of 150, and in Page 96 of 150, Table 8-2, and in Page 94 of 150, Figure 8-2, receiving segments during idle periods where no message is sent (see item Idle, Figure 8-2) before activity involving a message (first segment is classified as an empty segment and a second segment is classified). The Nexus reference fails to teach a second segment is classified as a message end after an idle segment. Petersen teaches these limitations.

In the same field of endeavor, Petersen teaches in column 4, lines 42-47, an idle state 601 (FIG. 6), and then shifting to a reassembly state 602 (FIG. 6) when first data arrives (item 604, FIG. 6), and, in column 4, lines 37-41, and in FIG. 4b, Sheet 2 of 10, if a data packet is so short that it can fit into a single minicell, segmentation is not

necessary, and a sending entity will send the data packet to the receiving entity in a single minicell marked "last segment" (a second segment is classified as a message end after an idle segment). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the invention of Petersen with the teachings of the Nexus reference since Petersen teaches a method where packets are segmented into minicells, which are transmitted within ATM cells, and where the method ensures that the maximum ATM cell payload is completely utilized by allowing data from more than one minicell to exist within the payload of an ATM cell, providing the most efficient usage of bandwidth, and can be implemented in the system of the Nexus reference to ensure that transfers per clocking period are carrying the maximum amount of data by allowing data from more than one packet or message to exist in a single transfer when a transfer is not filled when transferring data of only a single packet or message.

In regard to Claim 18, as discussed in the rejection of Claim 9, the Nexus reference teaches sending from an integrated circuit to a monitoring tool a segment. The Nexus reference further teaches a third segment of a plurality of segments, a third segment is classified as message start. The Nexus reference teaches in Page 92 of 150, and in Page 96 of 150, Table 8-2, and in Page 94 of 150, Figure 8-2, four-bit transmission sections of the packets are labeled as "Idle", "Start Message", "Normal Transfer", "End Packet", and "End Packet/Message", and where a "Start Message" labeled section is transmitted after an "End Packet" labeled section and an "End

Message" labeled section (a third segment of a plurality of segments, a third segment is classified as message start).

In regard to Claim 19, as discussed in the rejection of Claim 9, the Nexus reference teaches sending from an integrated circuit to a monitoring tool a segment. The Nexus reference further teaches a fourth segment of a plurality of segments, a fourth segment is classified as intermediary data. The Nexus reference teaches in Page 92 of 150, and in Page 96 of 150, Table 8-2, and in Page 94 of 150, Figure 8-2, four-bit transmission sections of the packets are labeled as “Idle”, “Start Message”, “Normal Transfer”, “End Packet”, and “End Packet/Message”, and where a “Normal Transfer” labeled section is transmitted after an “Start Message” labeled section (a fourth segment of a plurality of segments, a fourth segment is classified as intermediary data).

In regard to Claim 20, as discussed in the rejection of Claim 9, the Nexus reference teaches sending from an integrated circuit to a monitoring tool a segment. The Nexus reference further teaches a third segment of a plurality of segments, a third segment is classified as message start. The Nexus reference teaches in Page 92 of 150, and in Page 96 of 150, Table 8-2, and in Page 94 of 150, Figure 8-2, four-bit transmission sections of the packets are labeled as “Idle”, “Start Message”, “Normal Transfer”, “End Packet”, and “End Packet/Message”, and where a “Start Message” labeled section is transmitted after an “End Packet” labeled section and an “End

Message" labeled section (a third segment of a plurality of segments, a third segment is classified as message start).

Response to Arguments

I. Arguments for Objection to the Specification

Applicant's arguments, see page 8, filed 02/14/2008, with respect to Objection to the Specification have been fully considered and are persuasive. The objection of specification has been withdrawn.

II. Arguments for Rejections under 35 U.S.C. § 112

Applicant's arguments, see page 8, filed 02/14/2008, with respect to Claims 1-3 have been fully considered and are persuasive. The rejections of Claims 1-3 have been withdrawn.

III. Arguments for Rejections under 35 U.S.C. § 103

Applicant's arguments filed 02/14/2008 have been fully considered but they are not persuasive. Applicant submits Petersen fails to distinguish between a message and a packet, the message comprising a plurality of packets, and there is no disclosure made in Petersen with regard to sending more than one packet in a message. Examiner respectfully disagrees that this is sufficient for withdrawal of the rejections of Claims 1-4. Although Petersen does not state a user packet (message) comprises a plurality of smaller data units, Petersen does not need to teach these limitations, since

the Nexus reference teaches these limitations, as discussed above in the rejection of Claim 1, where the Nexus reference teaches in Page 97 of 150, 1st and 5th bullets, a data message is divided into packets (a message comprising a plurality of packets), and classifying the packets with one of five classifications. Petersen is introduced to show that a data unit from a user (user packet of Petersen, item 410, FIG. 4b) can be divided into multiple smaller data units (minicells of Petersen, items 411, 412, and 413, FIG. 4b), and that a single smaller data unit containing the last potion of a message is marked "last" (substantively the same as "classified as being a segment containing a message end" of applicant's instant invention), and Petersen is also introduced to show that in a system where a message (user packet of Petersen, item 410, FIG. 4b) is segmented though two different stages of data units (minicells and ATM cells of Petersen, FIG. 4b), and a minicell (packet) containing the beginning portion of a user packet (message) can be completely contained within an ATM cell payload (segment) (a segment containing both a start of a message and an end of a first packet of a message). In summary, Petersen need only show a relationship between a message from a user (user packet of Petersen) and a segment resulting from segmentation of the message, and that a segment among multiple segments that result from segmentation of a message can be marked accordingly to show it is the last segment of the message and is, therefore, classified as a last segment of the message, and Petersen also need only show a data unit (minicell of Petersen) containing the start of the message (user packet) can be completely contained within a second data unit (ATM cell).

Applicants also submits that Applicants' invention arose out of an improvement of Nexus, and that differences relative to Nexus are clearly reflected in the claims. Examiner respectfully disagrees that this is sufficient for withdrawal of the rejections of Claims 1-4. Although differences of Applicants' invention relative to Nexus are clearly reflected in the Claims, these differences are taught by Petersen, as discussed above in the previous paragraph and in the rejection of Claim 1, where Petersen teaches in column 4, lines 37-41, and in FIG. 4b, Sheet 2 of 10, if a data packet is so short that it can fit into a single minicell, segmentation is not necessary, and a sending entity will send the data packet to the receiving entity in a single minicell marked "last segment" (a segment containing both a start and an end of a message is classified as being a segment containing a message end), and where Petersen also teaches in column 3, lines 54-56, and in FIG. 4b, Sheet 2 of 10, the length of each minicell is limited to a length less than an ATM cell payload, and since a minicell is used for the beginning portion of each packet larger than a minicell, and since Petersen does not exclude such a minicell being completely contained within an ATM cell payload, Petersen implicitly teaches a minicell containing the beginning portion of a packet being completely contained within an ATM cell payload (a segment containing both a start of a message and an end of a first packet of a message).

Applicants also submit that Petersen fails to distinguish between a packet and a message and hence only divides segments into 3 types instead of five types as recited in Claims 1 and 4. Examiner respectfully disagrees that this is sufficient for withdrawal of the rejections of Claims 1-4. Although Petersen does not divide segments into 5

types, Petersen does not need to teach these limitations, since the Nexus reference teaches these limitations, as discussed above in the rejections of Claims 1 and 4, where the Nexus reference teaches in Page 92 of 150, and in Page 96 of 150, Table 8-2, and in Page 94 of 150, Figure 8-2, four-bit transmission sections of the packets are labeled as “Idle”, “Start Message”, “Normal Transfer”, “End Packet”, and “End Packet/Message” (each segment being classified according to at least one of five types).

Applicants also submit that Petersen does not distinguish between a packet end and an end message. Examiner respectfully disagrees that this is sufficient for withdrawal of the rejections of Claims 1-4. Although Petersen does not explicitly distinguish between a packet end and an end message, Petersen does not need to teach these limitations, since the Nexus reference teaches these limitations, as discussed above in the rejections of Claims 1 and 4, where the Nexus reference teaches in Page 92 of 150, and in Page 96 of 150, Table 8-2, and in Page 94 of 150, Figure 8-2, four-bit transmission sections of the packets are labeled as “Idle”, “Start Message”, “Normal Transfer”, “End Packet”, and “End Packet/Message”.

Applicants also submit that a person of ordinary skill in the art trying to adapt Petersen to the Nexus standard would not separate a first case when a segment contains both the start and the end of a message and a second case when a message contains the start of a message and the end of a data packet of the message. Examiner respectfully disagrees. A person of ordinary skill in the art at the time of the invention may be interested only in a specific case where a message is completely contained within a segment (since the Nexus reference already provides a method

where a message is larger than a segment) and a message end must be declared for each message completely contained within a segment so that a receiving device does not expect to receive a continuation of the message in the next segment if the majority of messages sent will be these smaller, completely contained messages.

Applicants also submit that the nature of data to be transmitted, the distances of transmission, and other characteristics of operating environment are different in the Nexus standard and in the Petersen reference such that one of ordinary skill in the art would not have recognized any reason to pick and choose characteristics of the transmissions in each. Examiner respectfully disagrees. Both the Nexus reference and the Petersen reference are concerned with the division of user data into segments for transmission that is governed by physical and protocol limitations.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Casaccia et al. (Pub. No.: US 2003/0035440 A1) teaches in paragraphs [0061] and [0070], and in FIG. 4A and FIG. 5A, fragmentation where fragments 304 (FIG. 5A) have identifiers for portions of a message each carry. Abiven (Patent No.: US 6,847,637 B1) teaches in column 17, lines 44-57, a signal EOP(0:1) equals to “01” when an end of message is concerned, and equals to "10" for an end of packet.

3. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JOSHUA SMITH whose telephone number is (571)270-1826. The examiner can normally be reached on Monday-Thursday 9:30am-7pm, Alternating Fridays 9:30am-6pm, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on 571-272-3088. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Joshua Smith
Patent Examiner

/Hassan Kizou/
Supervisory Patent Examiner, Art Unit 2619